

Modulaire Maritime – Phosgène Wavetable FM Oscillator

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Modulaire Maritime Phosgène – rhythmic and hyper-complex percussion use

Phosgène is a **2hp digital wavetable / FM oscillator voice**, so for dense percussion it works best as a **sound source** that you hit, gate, frequency-modulate, fold, and switch rapidly with CV. Based on the manual, the key percussion-friendly features are:

- **60 wavetables** in 2 banks of 30
- **Separate wavetable and FM outputs**
- **Wavefolding / waveshaping**
- **CV over folding / FM depth behavior**
- **V/Oct tracking over 8 octaves**
- **Octave up/down switching**
- **Octave displace switch** for pushing wavetable octaves lower
- **100 Hz FM base**, giving a darker, tighter FM character
- **11-bit lower-resolution digital tone**, including useful grit/aliasing

That combination is excellent for **synthetic drums, metallic hits, digital toms, clanks, glitches, zaps, and pseudo-snare/hat material**.

Core idea: Phosgène is not the sequencer, it is the drum engine

To get **polyrhythms, odd meters, and hyper-detailed percussion**, use external modules to provide:

- **Triggers/gates**
- **Envelopes**
- **VCAs / LPGs**
- **Sequenced CV**
- **Clock dividers / multipliers**
- **Logic / probability / ratchets**
- **Sequential switches / sample & hold**

Phosgène then becomes a **highly mutable oscillator voice** that can sound like many different percussion instruments depending on how you drive it.

Best patch role for Phosgène in complex percussion

1. Turn it into a drum voice with a VCA or LPG

Because it is an oscillator, the simplest path to percussion is:

Phosgène output → VCA or LPG → mixer

Then patch: - **Trigger pattern → envelope - Envelope → VCA CV**

This gives each note a defined transient and decay.

Why this matters

Even if the raw oscillator is continuous, the VCA/LPG creates: - kick-like plucks - tom hits - snappy FM pings - clipped digital clicks - short metallic bursts

For denser rhythmic music, use **very short decay envelopes** for some channels and **longer decays** for others so overlapping subdivisions remain readable.

2. Use the two outputs as two related percussion layers

The manual says wavetable and FM are available through **separate outputs**. That is extremely useful.

Patch concept

- **Wavetable out** = body / fundamental / tone
- **FM out** = snap / metallic edge / noisy overtone layer

Try: - Send each output to its **own VCA** - Use **different envelopes** on each - Mix them after

Example

- Wavetable out: medium decay envelope for a tom/kick body
- FM out: very short envelope for click/attack

This creates a **single composite drum voice** with more impact.

You can also sequence them differently: - Wavetable on quarter-note skeleton - FM out on offbeats, tuplets, ratchets, or polymetric accents

That yields one module behaving like **two interlocked percussion voices**.

Sound design for punchy percussion

3. Low octaves + short envelopes = kicks and toms

The manual notes that the **octave displace** function pushes wavetable octaves lower. That is ideal for percussion.

For kicks

- Use **wavetable output**
- Set to a **low octave**
- Enable **octave displace** if needed
- Choose a waveform with solid low content
- Add a **pitch envelope** via V/Oct input:
 - fast attack
 - very short downward drop

This creates classic synthesized kick behavior.

For toms

- Similar to kick patch, but:
 - less pitch envelope
 - slightly higher base pitch
 - moderate fold amount
 - medium-short decay

Sequence toms across different pitches using a CV sequencer in **odd step lengths** like 5, 7, or 9.

4. FM output for metallic percussion, snares, and industrial hits

The manual's 100 Hz FM base suggests darker, more controlled FM. That's especially useful for: - industrial knocks - tuned metal - snare-like digital impacts - electro percussion - low metallic bass percussion

Patch approach

- Use **FM output**
- Set a mid or low pitch
- Use short VCA envelope
- Modulate the shared controls with stepped CV
- Push FM harder for harsher attacks

For snare-adjacent sounds: - Mix **FM output** with a noise source, or - Use a noisier wavetable at higher fold settings

Because the module has some intentional lower-resolution character, you can also lean into the grit for **crunchy transient texture**.

5. Exploit aliasing and 11-bit character for hats, clicks, and digital debris

The manual explicitly mentions: - noise-containing wavetables - more pronounced aliasing at high ranges - "digital trash"

That is excellent for percussion.

For hats and ticks

- Use **high octave**
- Fast envelope
- Select brighter/noisier waves
- Add wavefolding
- Sequence with irregular trigger streams

For glitch percussion

- Rapidly modulate:
- wave selection
- bank selection if available by switch/performance
- octave state
- folding amount

If you cannot CV bank directly, you can still perform manual changes or use the module as a “featured” unstable digital percussion voice.

Use this in: - 13-step pattern against a 16-step kick grid - 5-over-4 accents - burst generators - Euclidean trigger streams

Strategies for polyrhythms and complex patterns

6. Use different rhythmic layers on wavetable and FM outputs

Since there are two outputs, treat them as separate voices in rhythm.

Example polymeter patch

- **Wavetable output** triggered by a **7-step sequence**
- **FM output** triggered by a **5-step sequence**
- Master clock still in 4/4 or 11/8

Result: - shifting accents - repeating composite cycle every 35 steps - strong hyper-rhythmic texture from one module

7. Sequence pitch separately from amplitude triggers

For complicated percussion, don't think melodically first—think **event structure**.

Use: - one sequencer for **triggers** - another sequencer for **pitch CV** - another modulation lane for **wave/fold amount**

Good pattern lengths

- Trigger pattern: 16
- Pitch sequence: 5
- Fold modulation: 7
- Accent envelope: 3 or 9

These mismatched lengths create evolving composite phrases without requiring constant manual intervention.

8. Use V/Oct as a percussion animation lane

Because it tracks across **8 octaves**, V/Oct is not only for melody. In percussion patches it becomes a way to create:

- kick vs tom contrast
- tuned percussion runs
- pseudo-congas
- stuttering tonal impacts
- pitched accents in odd meters

Great use case

Program a pattern in **11/8** where: - steps 1, 4, 7, 10 = low thumps - intervening hits jump 1–3 octaves - FM layer remains constant or inversely modulated

This keeps the groove asymmetrical but coherent.

9. Use octave jumps as accents

The module has octave switching and octave displacement. Even if not voltage-addressable, these can still be used compositionally.

Method

Set the module in a range where: - regular hits are mid-low - accented sections are manually or sequentially repatched to another octave CV region

If your sequencer can send transposition CV: - use fixed intervals for "accent classes" - e.g. main hits low, ghost hits high and thin, fills very high and aliased

This is especially effective in: - 7/8 with occasional 3-note fill - 5/4 with one high digital accent every second bar - nested 3:5:7 percussion systems

Advanced percussive patch ideas

10. Composite kick/snare from one module

Patch

- **Wavetable out** → VCA 1 → mixer
- **FM out** → VCA 2 → mixer

Control: - Envelope 1: short decay, some pitch envelope to V/Oct -
Envelope 2: ultra-short decay, more aggressive modulation

Pattern: - Wavetable layer on beats 1 and 3 - FM layer on 2 and 4, plus ghost notes

Result: - one oscillator acting like a paired drum machine voice

In odd meter: - body layer on a 4-hit cycle - FM layer on a 3-hit cycle - creates constant phase-shifting accents

11. Industrial rim / clang voice

Patch

- FM out
- Mid-high pitch
- Very short envelope
- Moderate to high fold/FM tone setting
- Optional bandpass filter after VCA

Sequence with: - sparse irregular triggers - probability skips - 5-step pattern over 4/4 kick - occasional ratchets

This gives machine-like, hard-edged percussion suitable for industrial, IDM, broken techno, and rhythmic noise.

12. Digital hi-hat cluster generator

Patch

- High-pitched wavetable or FM output
- Tiny envelope decay
- Fast clocked modulation to wave select or fold depth
- Highpass filter after the VCA if available

Then feed triggers from: - Euclidean pattern of 9 in 16 - burst generator for fills - logic-combined clocks, e.g. /3 XOR /5

The module's aliasing and low-resolution edge help make each hat cluster sound less static.

13. Evolving percussion swarm

Use 3 modulation streams at once:

- **Trigger stream A** controls amplitude
- **Stepped random CV** to V/Oct
- **Slow CV** to fold/waveshape amount

Then run triggers at one length and pitch CV at another: - triggers in 13 steps - pitch in 8 - fold modulation in 5

Over time Phosgène will move through: - low thuds - hollow pings - metallic cracks - bright digital splinters

Perfect for dense, self-evolving rhythmic beds.

How to make it more unique and percussive

14. Add pitch envelopes

This is one of the most important techniques.

Patch a snappy envelope to the **V/Oct input** through an attenuator.

Results

- fast downward pitch sweep = kick, tom, zap
- tiny pitch spike = stronger attack
- medium sweep = laser percussion / electro tom

For complicated rhythms, vary the envelope amount by accent so different hits read like different drum types.

15. Use very short VCAs for click extraction

Even without dedicated transient shaping, an ultra-short envelope can carve clicks and ticks from almost any oscillator setting.

Try: - 1–10 ms decay - high or aliased wavetable - no sustain

This is a great way to create: - microsound percussion - granular-seeming ticks - top-layer detail over slower drum patterns

Use these in tuplets or odd subdivisions to make the rhythm feel hyper-detailed.

16. Layer filtered and unfiltered versions

Split one output: - one path direct - one path through filter/distortion/wavefolder

Then mix.

This gives: - stable low-end body - aggressive upper transient

Especially useful when a single Phosgène hit needs to cut through dense polyrhythmic arrangements.

17. Use modulation as “drum type switching”

Instead of thinking “this patch is a kick,” let modulation determine whether any given trigger becomes: - a kick - a tom - a click - a metallic ping - a snare-like burst

You do this by changing, per event: - pitch - envelope decay - fold amount - output choice - filtering after the module

This is ideal for complex pattern music because a single voice can generate many timbral identities while staying sonically related.

Rhythm system ideas that work especially well

18. 4-against-5-against-7

Use Phosgène as the bright or metallic voice in a larger drum system.

Example: - Kick module: 4-step cycle - Phosgène wavetable body hits: 5-step cycle - Phosgène FM accents: 7-step cycle

This creates a long composite loop with constant internal motion.

19. Odd meter phrase design

In **11/8**: - steps 1, 4, 7 = low wavetable thuds - steps 3, 6, 9, 11 = FM metallic ticks - wave/fold modulation every 5 steps

This produces a phrase that feels composed rather than random.

20. Accent logic with probability

Use probabilistic triggers or logic to decide when the FM layer opens.

For example: - every main trigger hits the wavetable body - FM layer only opens on: - every 3rd trigger - random 40% probability - XOR of two clocks

That creates unstable, intelligent-feeling complexity without overwhelming the groove.

Practical tips

21. Keep low end controlled

Because Phosgène can go low and also bright through folding, separate roles carefully: - one patch for sub/body - another path for bright detail

If the patch gets too dense: - shorten envelope decays - highpass the bright layer - reduce modulation depth on busy subdivisions

22. Save useful startup states

The manual says it saves: - Bank - wave - octave

So if you find a strong percussion setup, you can keep a preferred startup configuration ready for future patches.

That makes it practical as a repeatable drum voice in performance systems.

23. Embrace the “digital trash”

The manual explicitly frames aliasing and low-res behavior as part of the character. For hyper-complex percussion, that is a strength.

Use it for: - tops - transitions - fills - machine chatter - broken digital strikes

Don't over-clean it unless you want a more conventional sound.

Best companion modules for this purpose

Phosgène becomes much stronger for rhythmic complexity when paired with:

- **Envelope generators** with very fast attack/decay
- **VCAs** or **LPGs**
- **Clock dividers/multipliers**
- **Euclidean sequencers**
- **Trigger sequencers with independent track lengths**
- **Logic modules**
- **Sample & hold / stepped random**
- **Sequential switches**
- **Filters / distortion / wavefolders**
- **Accent VCAs or transient shapers**

Bottom line

Phosgène is very usable for **dense, polyrhythmic percussion** because it offers:

- low-end capable wavetable tones
- separate FM and wavetable outputs
- dark, controlled FM character
- folding / timbral movement
- wide pitch range
- useful digital grit and aliasing

The best strategy is to treat it as a **multi-role synthetic drum voice**: - **wavetable out** for body - **FM out** for attack/metal layer - external envelopes and VCAs for articulation - independent trigger and CV sequences for polymetric evolution

That will get you kicks, toms, hats, metallic impacts, clanks, glitch hits, and industrial percussion from one very small module.

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